Claims

What is claimed is:

1. An injection molding nozzle tip removably attachable to a nozzle housing, the nozzle tip comprising:

a first portion, and a second portion fused to the first portion at a junction, the first and second portions being made of different materials.

- 2. The nozzle tip of claim 1, wherein the junction is oriented substantially radially.
- 3. The nozzle tip of claim 1, wherein the junction is oriented at an angle from radial.
- 4. The nozzle tip of claim 1, wherein, the first portion is a nozzle tip retainer and second portion is a seal ring.
- 5. The nozzle tip of claim 1, wherein the first portion is a tip portion and the second portion is a cap.
- 6. The nozzle tip of claim 1, wherein the first portion is a retaining plate for a multi-probe nozzle tip, and the second portion is a seal ring.
 - 7. An injection molding manifold bushing, comprising:

a first portion, and a second portion fused to the first portion at a junction, the first and second portions being made of different materials.

- 8. An injection molding nozzle valve stem, comprising:
- a first portion, and a second portion fused to the first portion at a junction, the first and second portions being made of different materials.
- 9. The valve stem of claim 8, wherein the second portion is a tip end of the valve stem.

10. An injection molding nozzle housing, comprising:

a body portion, and a flanged portion fused to the body portion at a junction, the body portion and flanged portions being made of different materials.

11. An injection molding nozzle tip insert comprising:

a shank portion, and an end portion fused to the shank portion at a junction, the shank portion and end portions being made of different materials.

12. A method of making an injection molding nozzle tip component with a seal ring, comprising the steps of:

forming a first portion of the nozzle tip component from a first material;

forming a seal ring from a second material;

aligning the seal ring to the first portion at a junction whereat a surface of the seal ring abuts a surface of the first portion; and

fusing the first portion and the seal ring together at the junction.

- 13. The method of claim 12, wherein the fusing is done by electron beam welding.
- 14. The method of claim 12, further comprising the step of machining the fused first and second portions to a final configuration which removes material adjacent the junction.
- 15. The method of claim 12, wherein the aligning is done by an alignment feature formed on the first and second portions.
- 16. The method of claim 15, wherein the alignment feature is a ridge formed in one of the portions and a recess formed in the other portion, the recess receiving the ridge to align the portions.
- 17. A method of forming an injection molding nozzle tip component, comprising the steps of:

forming a first blank for a first portion of the nozzle tip component;
forming a second blank for a second portion of the nozzle tip component;
abutting the second blank against the first blank at a junction;
fusing the first blank and second blank at the junction; and
machining the fused first and second blanks to a configuration for the first portion
and second portion of the nozzle tip component.

- 18. The method of claim 17, wherein the fusing is done by electron beam welding.
- 19. The method of claim 18, wherein the first portion is a tip retainer and second portion is a seal ring.